IN THE CLAIMS

1. (Original) A method for constructing a medical implant device, comprising:

forming a porous metal base;

depositing a corrosion barrier layer on said porous metal base, said deposition including laser based metal deposition (LBMD); and

depositing a layer comprising a bearing material onto said corrosion barrier layer using LBMD.

2. (Original) A method as in claim 1, wherein said porous metal base comprises a material selected from the group consisting of: cobalt-chrome, tantalum (Ta), titanium, stainless steel, and alloys thereof.

3. (Original) A method as in claim 1, wherein said corrosion barrier layer comprises titanium (Ti).

4. (Original) A method as in claim 1, wherein said corrosion barrier layer comprise an alloy including Ti.

5. (Original) A method as in claim 1, wherein said laser based metal deposition of said barrier layer includes applying said barrier layer as a foil and heating said foil with a laser.

6. (Original) A method as in claim 1, wherein said laser based metal deposition of said barrier layer includes applying said barrier layer as a powder and heating said powder with a laser.

7. (Currently Amended) A method as in claim 1, wherein said laser based metal deposition of said barrier layer includes applying said barrier layer as a wire and heating said wire with a laser.

8. (Original) A method as in claim 1 wherein said bearing material layer comprises ~~of~~ a Co-Cr layer comprising an alloy comprised of cobalt (Co) and chromium (Cr).

9. (Currently Amended) A method as in clam 8, wherein said alloy comprised of cobalt (Co) and chromium (Cr) is formed as a foil, wherein depositing said bearing material layer comprises ~~and~~ heating said foil with a laser.

10. (Currently Amended) A method as in clam 8, wherein said alloy comprised of cobalt (Co) and chromium (Cr) is formed as a powder, wherein depositing said bearing material layer comprises ~~and~~ heating said wire with a laser.

11. (Currently Amended) A method as in clam 8, wherein said alloy comprised of cobalt (Co) and chromium (Cr) is formed as a wire, wherein depositing said bearing material layer comprises ~~and~~ heating said wire with a laser.

12. (Currently Amended) A method as in claim 8, wherein said laser based metal deposition of said corrosion barrier layer and said Co-Cr layer ~~includes~~ comprises heating said corrosion barrier layer and said Co-Cr layer with a high power Nd YAG laser.

13. (Currently Amended) A method as in claim 8, wherein said (LBMD) heats said Co-Cr sufficiently to melt said Co-Cr and also allows said Co-Cr to cool sufficiently quickly to form a small grain structure in said Co-Cr, thereby hardening said Co-Cr.

14. (Original) A method as in claim 8, wherein said (LBMD) heats said Co-Cr sufficiently to melt said Co-Cr and also allows said Co-Cr to cool sufficiently quickly to form carbon interspersions in said Co-Cr, thereby hardening said Co-Cr.

15. (Original) A method as in clam 1, wherein said base comprises Ti-6Al-4V.

16. (Original) A method as in claim 1, wherein said base comprises Ti or any alloy thereof.

17. (Original) A method as in claim 1, wherein at least one of said corrosion barrier layer and said bearing material is deposited in a plurality of layers having differing material properties to form a gradient of material properties.

18. (Original) A method for constructing a medical implant device, comprising:

forming a first structure including a porous base;

depositing a corrosion barrier layer on said porous metal base, said deposition including laser based metal deposition;

depositing a layer comprising Co and Cr (Co-Cr) onto said corrosion barrier layer using laser based metal deposition;

providing a second structure comprising Co-Cr; and bonding said deposited Co-Cr portion of said first structure onto said second structure.

19. (Currently Amended) A method as in claim 18, wherein said porous base comprises Ti or any alloy thereof.

20. (Original) A method as in claim 18, wherein said porous base comprises Co-Cr or any alloy thereof.

21. (Original) A method as in claim 18, wherein said porous base comprises tantalum or any alloy thereof.

22. (Original) A medical implant device, comprising:

a porous metal base;

corrosion barrier layer formed on said porous metal base by laser based metal deposition (LBMD); and

a second layer formed on said corrosion barrier layer using LBMD, the second layer having a hardness greater than the porous metal base.

23. (Original) A device as in claim 22, wherein said porous metal base comprises a material selected from the group consisting of: Ta, Ti, stainless steel, and alloys thereof.

24. (Original) A device as in claim 22, wherein said corrosion barrier layer comprises Ti or alloys thereof.

25. (Original) A device as in claim 22, wherein said second layer comprises Co and Cr.

26. (Original) A device as in claim 22, wherein said porous metal base comprises Ta, said corrosion barrier layer comprises Ti or alloys thereof, and said second layer comprises Co and Cr.

27. (Original) A device as in claim 22, wherein said second layer is coupled to a second medical implant device.

28. (Currently Amended) A method for constructing a medical implant device, the method comprising:

forming a structure from a base metal having a biocompatible composition; and

depositing a ~~second layer onto the surface of the base metal comprising a Co-Cr alloy~~ bearing material onto a surface of the base metal using Laser Based Metal Deposition (LBMD).

29. (Currently Amended) A method as in claim 28, wherein said (LBMD) heats said ~~Co-Cr~~ bearing material sufficiently to melt said ~~Co-Cr~~ bearing material and also allows said ~~Co-Cr~~ bearing material to cool sufficiently quickly to form a small grain structure in said ~~Co-Cr~~ bearing material thereby hardening said ~~Co-Cr~~ bearing material.

30. (Currently Amended) A method as in claim 28, wherein said (LBMD) heats said ~~Co-Cr~~ sufficiently to melt said ~~Co-Cr~~ bearing material and also allows said ~~Co-Cr~~ bearing material to cool sufficiently quickly to form carbon interspersions in said ~~Co-Cr~~ bearing material, thereby hardening said ~~Co-Cr~~ bearing material.

31. (Currently Amended) A medical implant device~~,~~ comprising:

a metal base structure having a biocompatible composition; and

a ~~second layer~~ bearing material formed onto said metal base structure by Laser Based Metal Deposition (LBMD);

wherein the ~~second layer comprising a Cobalt-Chrome based alloy~~ bearing material ~~having~~ has a hardness greater than a hardness of the metal base structure.

32. (Original) A device as in claim 31, wherein said metal base structure comprises a material selected from the group consisting of: Cobalt-Chrome, Tantalum, Titanium, Platinum, stainless steel, and alloys thereof.

33. (Currently Amended) A device as in claim 31, wherein said ~~second layer~~bearing material is coupled to a second medical implant device.

34. (New) A device as in claim 31, wherein the bearing material comprises Cobalt (Co) and Chromium (Cr).

35. (New) A method as in claim 28, wherein the structure comprises a base shaped to be secured to a body part of a patient.

36. (New) A method as in claim 28, wherein said structure comprises a material selected from the group consisting of: cobalt-chrome, tantalum (Ta), titanium, stainless steel, and alloys thereof.

37. (New) A method as in claim 28, wherein the bearing material comprises Cobalt (Co) and Chromium (Cr).

38. (New) A method as in claim 28, wherein depositing said bearing material onto said surface comprises applying said bearing material as a foil and heating said foil with a laser.

39. (New) A method as in claim 28, wherein depositing said bearing material onto said surface comprises applying said bearing material as a powder and heating said powder with a laser.

40. (New) A method as in claim 28, wherein depositing said bearing material onto said surface comprises applying said bearing material as a wire and heating said wire with a laser.

41. (New) A method as in claim 28, wherein depositing said bearing material onto said surface comprises heating said bearing material with a high power Nd YAG laser.

42. (New) A method for constructing a medical implant device, the method comprising:

forming a base shaped to be secured to a body part of a patient; and

depositing a bearing material onto a surface of the base using Laser Based Metal Deposition (LBMD).

43. (New) A method as in claim 42, wherein said (LBMD) heats said bearing material sufficiently to melt said bearing material and also allows said bearing material to cool sufficiently quickly to form a small grain structure in said bearing material thereby hardening said bearing material.

44. (New) A method as in claim 42, wherein said (LBMD) heats said sufficiently to melt said bearing material and also allows said bearing material to cool sufficiently quickly to form carbon interspersions in said bearing material, thereby hardening said bearing material.

45. (New) A method as in claim 42, wherein the base comprises a base shaped to be secured to a body part of a patient.

46. (New) A method as in claim 42, wherein said base comprises a material selected from the group consisting of: cobalt-chrome, tantalum (Ta), titanium, stainless steel, and alloys thereof.

47. (New) A method as in claim 42, wherein the bearing material comprises Cobalt (Co) and Chromium (Cr).

48. (New) A method as in claim 42, wherein depositing said bearing material onto said surface comprises applying said bearing material as a foil and heating said foil with a laser.

49. (New) A method as in claim 42, wherein depositing said bearing material onto said surface comprises applying said bearing material as a powder and heating said powder with a laser.

50. (New) A method as in claim 42, wherein depositing said bearing material onto said surface comprises applying said bearing material as a wire and heating said wire with a laser.

51. (New) A method as in claim 28, wherein depositing said bearing material onto said surface comprises heating said bearing material with a high power Nd YAG laser.

52. (New) A medical implant device comprising:

a base shaped to be secured to a body part of a patient; and

a bearing material formed onto said base by Laser Based Metal Deposition (LBMD); wherein the bearing material has a hardness greater than a hardness of the base.

53. (New) A device as in claim 52, wherein said base comprises a material selected from the group consisting of: Cobalt-Chrome, Tantalum, Titanium, Platinum, stainless steel, and alloys thereof.

54. (New) A device as in claim 52, wherein said bearing material is coupled to a second medical implant device.

55. (New) A device as in claim 31, wherein the bearing material comprises Cobalt (Co) and Chromium (Cr).